UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,289	12/07/2004	Axel Doering	GK-ZEI-3255 / 500343.2027	4475

26418 7590 05/22/2007

REED SMITH, LLP
ATTN: PATENT RECORDS DEPARTMENT
599 LEXINGTON AVENUE, 29TH FLOOR
NEW YORK, NY 10022-7650

EXAMINER	
DWIVEDI, MAHESH H	

ART UNIT	PAPER NUMBER
2168	

MAIL DATE	DELIVERY MODE
05/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/517,289	DOERING, AXEL	
	Examiner	Art Unit	
	Mahesh H. Dwivedi	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/08/2006 has been entered.

Remarks

2. Receipt of Applicant's Amendment, filed on 04/13/2007, is acknowledged. The amendment includes the cancellation of claims 1-6, and the amending of claims 7 and 11.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 11-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The examiner specifically points to **"An arrangement"** as being directed towards nonstatutory subject matter.

The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, function descriptive material *per se*.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 7-13 are rejected under 35 U.S.C. 102(a) as being anticipated by **Sinclair et al.** (U.S. PGPUB 2002/0052551).

8. Regarding claim 7, **Sinclair** teaches a method comprising:

A) determining deviations from a stored comparison image and/or from a standard image created by evaluating a plurality of comparison images of a similar pathology (Paragraphs 19, 166-167, 231-232, 234, and 252-267); and/or

B) carrying out a similarity analysis by a stored comparison image, and/or by a standard image created by evaluating a plurality of comparison images of a similar pathology (Paragraphs 19, 72, 166-167, 231-232, 234, and 252-267); and

C) creating new images that are stored for purposes of comparison at a later time (Paragraphs 44 and 72).

The examiner notes that **Sinclair** teaches **"determining deviations from a stored comparison image and/or from a standard image created by evaluating a plurality of comparison images of a similar pathology"** as "Another significant element of this invention is one or more retinal grading algorithms that automatically evaluate the digital retinal images obtained by the screening subsystems for particular retinopathies. Generally, the RGAs operate in a lesion-based fashion, first identifying ophthalmologically significant retinal lesions or features by use of image processing methods, and second evaluating and grading the retinopathy in view of the identified lesions by use of artificial intelligence/cognitive decision capabilities" (Paragraph 19), "The RGAs are based on detecting and identifying "lesions" in fundus images. Therefore, each image (field of view) is evaluated to detect the number and type of lesions, and the cumulative lesion information for all acquired images is processed to arrive at a final retinopathy grade level for each eye. This processing may be by an expert

system, perhaps rule-based, that simulates the considerations of an ophthalmologist when presented with similar cumulative lesion information" (Paragraph 231), and "In somewhat more detail, the following lists DR lesions that are preferably detected and identified by all RGA algorithms. Sophisticated RGA algorithms for DR detect additionally the advantageous lesions. DR Lesions and Characteristics Preferably Identified...Fovea (or approximate foveal location)... Epi-retinal (or epi-papillary) neovascularization--size and distance to optic nerve head or fovea" (Paragraphs 252-265). The examiner further notes that **Sinclair** teaches **"carrying out a similarity analysis by a stored comparison image, and/or by a standard image created by evaluating a plurality of comparison images of a similar pathology"** as "Also, in preferred embodiments where prior retinal images are available and may be compared to a current retinal image, the time progression or regression of lesions may be identified. Then, detailed lesion information and lesion history may be taken into account in adjusting retinal image grading. For example, if a current image received a grade of level 2, but it contained lesions in critical anatomic regions as near the optic nerve head, or the fovea, or so forth, or contained rapidly growing or multiplying lesions, it may be promoted to grade level 3. Conversely, if a current image received a grade of level 3, but it contained regressing lesions in locations posing no threat of imminent visual impairment, it may be demoted to grade level 2 (or 2+) (Generally, grade level 3 signifies specialist consultation is recommended, while grade level 2 signifies that routine follow-up screening is recommended.)" (Paragraph 72), "The RGAs are based on detecting and identifying "lesions" in fundus images. Therefore, each image (field of view) is evaluated to detect the number and type of lesions, and the cumulative lesion information for all acquired images is processed to arrive at a final retinopathy grade level for each eye. This processing may be by an expert system, perhaps rule-based, that simulates the considerations of an ophthalmologist when presented with similar cumulative lesion information" (Paragraph 231), and "In somewhat more detail, the following lists DR lesions that are preferably detected

and identified by all RGA algorithms. Sophisticated RGA algorithms for DR detect additionally the advantageous lesions. DR Lesions and Characteristics Preferably Identified...Fovea (or approximate foveal location)... Epi-retinal (or epi-papillary) neovascularization--size and distance to optic nerve head or fovea" (Paragraphs 252-265). The examiner further notes that **Sinclair** teaches **"creating new images that are stored for purposes of comparison at a later time"** as "identify, and characterize in the prior retinal images lesions from the pre-determined set lesions type, comparing the lesions detected in the image taken at the selected time with the lesions detected in the prior image to detect changes in the lesions, and performing a decision process that assigns a grade to the retinal image taken at the selected time in dependence on the identities and characteristics of the lesions detected in that image, and in dependence on the changes in the lesions detected in the comparing step" (Paragraph 44) and "Also, in preferred embodiments where prior retinal images are available and may be compared to a current retinal image, the time progression or regression of lesions may be identified. Then, detailed lesion information and lesion history may be taken into account in adjusting retinal image grading. For example, if a current image received a grade of level 2, but it contained lesions in critical anatomic regions as near the optic nerve head, or the fovea, or so forth, or contained rapidly growing or multiplying lesions, it may be promoted to grade level 3. Conversely, if a current image received a grade of level 3, but it contained regressing lesions in locations posing no threat of imminent visual impairment, it may be demoted to grade level 2 (or 2+) (Generally, grade level 3 signifies specialist consultation is recommended, while grade level 2 signifies that routine follow-up screening is recommended.)" (Paragraph 72).

Regarding claim 8, **Sinclair** further teaches a method comprising:
A) wherein the evaluation is carried out by averaging extracted features (Paragraphs 305-344).

The examiner notes that **Sinclair** teaches **"wherein the evaluation is carried out by averaging extracted features"** as "The following lists exemplary and non-limiting statistical information which may be obtained and accumulated in an OSS implementation. The following statistical parameters may be accumulated to aid in quality control and oversight of an OSS. Exemplary Quality Control Statistics...Percent of eyes with more advanced lesions noted in each field (1, 2, 3, 4 or 5) without equivalent lesions noted in other fields. Percent of patients who complied with recommendation for screening and follow-up screening; time interval between receipt of recommendation/referral by patient and actual follow-up screening. Sensitivity & specificity of the grading algorithm as compared with the gold standard of grading performed by the retinal specialist--for each eye (variance with age, pupil size, necessity for dilation, presence of cataract)" (Paragraphs 305-344). The examiner further notes that the various statistical analysis of the fundus properties of patients is analogous to an averaging function.

Regarding claim 9, **Sinclair** further teaches a method comprising:
A) wherein deviations are determined and/or the similarity analysis is carried out on the basis of a gray-value analysis and/or an analysis of color histograms and/or a structure analysis (Paragraphs 19, 166-167, 231-232, 234, and 252-267).

The examiner notes that **Sinclair** teaches **"wherein deviations are determined and/or the similarity analysis is carried out on the basis of a gray-value analysis and/or an analysis of color histograms and/or a structure analysis"** as "Another significant element of this invention is one or more retinal grading algorithms that automatically evaluate the digital retinal images obtained by the screening subsystems for particular retinopathies. Generally, the RGAs operate in a lesion-based fashion, first identifying ophthalmologically significant retinal lesions or features by use of image processing methods, and second evaluating and grading the retinopathy in view

of the identified lesions by use of artificial intelligence/cognitive decision capabilities" (Paragraph 19), "The RGAs are based on detecting and identifying "lesions" in fundus images. Therefore, each image (field of view) is evaluated to detect the number and type of lesions, and the cumulative lesion information for all acquired images is processed to arrive at a final retinopathy grade level for each eye. This processing may be by an expert system, perhaps rule-based, that simulates the considerations of an ophthalmologist when presented with similar cumulative lesion information" (Paragraph 231), and "In somewhat more detail, the following lists DR lesions that are preferably detected and identified by all RGA algorithms. Sophisticated RGA algorithms for DR detect additionally the advantageous lesions. DR Lesions and Characteristics Preferably Identified...Fovea (or approximate foveal location)... Epi-retinal (or epi-papillary) neovascularization--size and distance to optic nerve head or fovea" (Paragraphs 252-265). The examiner further notes that paragraph 11 of the specification of the instant application defines a structural analysis of as "classification and quantification of structures at the ocular fundus (e.g., papilla, fovea)".

Regarding claim 10, **Sinclair** further teaches a method comprising:
A) wherein an extraction of vascular tree parameters is carried out (Paragraphs 268-272).

The examiner notes that **Sinclair** teaches **"wherein deviations are determined and/or the similarity analysis is carried out on the basis of a gray-value analysis and/or an analysis of color histograms and/or a structure analysis"** as "Second, diameter and tortuosity measurements for major vessel abnormalities including: Major artery tortuosity--deviations of 1.sup.st, 2.sup.nd, and 3.sup.rd order arteries from a straight line (point-to-point); also requires determination of whether the deviations are caused by branchings or by deviations between branchings; in other words, if a vessel branches unequally (daughter vessels are unequal in caliber), this causes a deviation of the large parent vessel into the larger of the two daughter vessels, Major vein

tortuosity--deviations of 1.sup.st, 2.sup.nd, and 3.sup.rd order veins from a straight line (point-to-point) and whether deviations are caused by branchings or by deviations in between branchings, Major artery diameter (and variation in diameter) versus distance along vessel starting at the optic nerve head--for 1.sup.st and 2.sup.nd order vessels; second order vessels are defined as either two daughter vessels after an equal branching (branching in which both daughter vessels are of same caliber) or the smaller caliber vessel of the daughter vessels in an unequal branching, Major vein diameter (and variation in diameter) versus distance along vessel--for 1.sup.st and 2.sup.nd order vessels." (Paragraphs 268-272).

Regarding claim 11, **Sinclair** teaches an arrangement comprising:
A) a fundus camera for recording the ocular fundus (Paragraphs 88-89, and 184);
B) an image storage for storing recorded fundus images (Paragraphs 24, 119-121, 166, and 228); and
C) means for evaluating the recorded fundus images of a similar pathology further comprising means for gray-value analysis and/or means for preparing color histograms and/or means for structure analysis (Paragraphs 19, 166-167, 231-232, 234, and 252-267); and
D) a comparison unit connected to the image storage (Paragraphs 44 and 72);
E) wherein the comparison unit compares images recording in the image storage and creates new images of a similar pathology (Paragraphs 44 and 72).

The examiner notes that **Sinclair** teaches **"a fundus camera for recording the ocular fundus"** as "For image capture and acquisition, preferably a non-mydriatic retinal camera is used to acquire retinal images in order to avoid the patient inconvenience of pupil dilation (mydriasis)" (Paragraph 88), "The present invention may use a wide range of non-mydriatic cameras, including commercially-available cameras from, e.g., Canon, Nikon, and so forth, and also including specially designed and built cameras. From whatever source, preferred

cameras have should have optics capable of acquiring up to 45.degree. retinal fields through pupils down to 2.0 mm in diameter with adequate image contrast and resolution" (Paragraph 89), and "retinal (fundus) camera with CCD sensors" (Paragraph 184). The examiner further notes that **Sinclair** teaches **"an image storage for storing recorded fundus images"** as "The central database ("CDB") is an on-line (or otherwise efficiently accessible) storage repository of the data generated in an OSS system. The CDB stores patient oriented data such as original image data from patient screening examinations, results of RGA screening including images annotated or marked-up with lesion identification, associated patient identification, demographics, and screening/examination history, results of manual ophthalmologist grading process including any annotated images, referrals and reports" (Paragraph 119) and "The CDB has several uses in an OSS, and its centralized image (also possible with distributed database architectures) provides several advantages. Its principal use is to provide physicians, specialists, ophthalmologists, and other users with access to current images as well as the results of any prior studies, regardless of where acquired. This historical record permits an objective and quantitative evaluation, either by automatic algorithmic processes or by manual physician examination, of the status and progression of the ocular disease in individual patients" (Paragraph 121). The examiner further notes that **Sinclair** teaches **"means for evaluating the recorded fundus images <u>of a similar pathology</u> further comprising means for gray-value analysis and/or means for preparing color histograms and/or means for structure analysis"** as "Another significant element of this invention is one or more retinal grading algorithms that automatically evaluate the digital retinal images obtained by the screening subsystems for particular retinopathies. Generally, the RGAs operate in a lesion-based fashion, first identifying ophthalmologically significant retinal lesions or features by use of image processing methods, and second evaluating and grading the retinopathy in view of the identified lesions by use of artificial intelligence/cognitive decision capabilities" (Paragraph 19), "The RGAs are

based on detecting and identifying "lesions" in fundus images. Therefore, each image (field of view) is evaluated to detect the number and type of lesions, and the cumulative lesion information for all acquired images is processed to arrive at a final retinopathy grade level for each eye. This processing may be by an expert system, perhaps rule-based, that simulates the considerations of an ophthalmologist when presented with similar cumulative lesion information" (Paragraph 231), and "In somewhat more detail, the following lists DR lesions that are preferably detected and identified by all RGA algorithms. Sophisticated RGA algorithms for DR detect additionally the advantageous lesions. DR Lesions and Characteristics Preferably Identified...Fovea (or approximate foveal location)... Epi-retinal (or epi-papillary) neovascularization--size and distance to optic nerve head or fovea" (Paragraphs 252-265). The examiner further notes that paragraph 11 of the specification of the instant application defines a structural analysis of as "classification and quantification of structures at the ocular fundus (e.g., papilla, fovea)". The examiner further notes that **Sinclair** teaches **"a comparison unit connected to the image storage"** as "identify, and characterize in the prior retinal images lesions from the pre-determined set lesions type, comparing the lesions detected in the image taken at the selected time with the lesions detected in the prior image to detect changes in the lesions, and performing a decision process that assigns a grade to the retinal image taken at the selected time in dependence on the identities and characteristics of the lesions detected in that image, and in dependence on the changes in the lesions detected in the comparing step" (Paragraph 44) and "Also, in preferred embodiments where prior retinal images are available and may be compared to a current retinal image, the time progression or regression of lesions may be identified. Then, detailed lesion information and lesion history may be taken into account in adjusting retinal image grading. For example, if a current image received a grade of level 2, but it contained lesions in critical anatomic regions as near the optic nerve head, or the fovea, or so forth, or contained rapidly growing or multiplying lesions, it may be promoted to grade level 3. Conversely, if a

current image received a grade of level 3, but it contained regressing lesions in locations posing no threat of imminent visual impairment, it may be demoted to grade level 2 (or 2+) (Generally, grade level 3 signifies specialist consultation is recommended, while grade level 2 signifies that routine follow-up screening is recommended.)" (Paragraph 72). The examiner further notes that **Sinclair** teaches **"wherein the comparison unit compares images recording in the image storage and creates new images of a similar pathology"** as "identify, and characterize in the prior retinal images lesions from the pre-determined set lesions type, comparing the lesions detected in the image taken at the selected time with the lesions detected in the prior image to detect changes in the lesions, and performing a decision process that assigns a grade to the retinal image taken at the selected time in dependence on the identities and characteristics of the lesions detected in that image, and in dependence on the changes in the lesions detected in the comparing step" (Paragraph 44) and "Also, in preferred embodiments where prior retinal images are available and may be compared to a current retinal image, the time progression or regression of lesions may be identified. Then, detailed lesion information and lesion history may be taken into account in adjusting retinal image grading. For example, if a current image received a grade of level 2, but it contained lesions in critical anatomic regions as near the optic nerve head, or the fovea, or so forth, or contained rapidly growing or multiplying lesions, it may be promoted to grade level 3. Conversely, if a current image received a grade of level 3, but it contained regressing lesions in locations posing no threat of imminent visual impairment, it may be demoted to grade level 2 (or 2+) (Generally, grade level 3 signifies specialist consultation is recommended, while grade level 2 signifies that routine follow-up screening is recommended.)" (Paragraph 72).

Regarding claim 12, **Sinclair** further teaches an arrangement comprising: A) a means for determining deviations from a stored comparison image and/or from a standard image created by evaluating a plurality of comparison images,

and/or a means for carrying out a similarity analysis by a stored comparison image and/or by a standard image created by evaluating a plurality of comparison images (Paragraphs 19, 166-167, 231-232, 234, and 252-267).

The examiner notes that **Sinclair** teaches **"a means for determining deviations from a stored comparison image and/or from a standard image created by evaluating a plurality of comparison images, and/or a means for carrying out a similarity analysis by a stored comparison image and/or by a standard image created by evaluating a plurality of comparison images"** as "Another significant element of this invention is one or more retinal grading algorithms that automatically evaluate the digital retinal images obtained by the screening subsystems for particular retinopathies. Generally, the RGAs operate in a lesion-based fashion, first identifying ophthalmologically significant retinal lesions or features by use of image processing methods, and second evaluating and grading the retinopathy in view of the identified lesions by use of artificial intelligence/cognitive decision capabilities" (Paragraph 19), "The RGAs are based on detecting and identifying "lesions" in fundus images. Therefore, each image (field of view) is evaluated to detect the number and type of lesions, and the cumulative lesion information for all acquired images is processed to arrive at a final retinopathy grade level for each eye. This processing may be by an expert system, perhaps rule-based, that simulates the considerations of an ophthalmologist when presented with similar cumulative lesion information" (Paragraph 231), and "In somewhat more detail, the following lists DR lesions that are preferably detected and identified by all RGA algorithms. Sophisticated RGA algorithms for DR detect additionally the advantageous lesions. DR Lesions and Characteristics Preferably Identified...Fovea (or approximate foveal location)... Epi-retinal (or epi-papillary) neovascularization--size and distance to optic nerve head or fovea" (Paragraphs 252-265).

Regarding claim 13, **Sinclair** further teaches an arrangement comprising:

A) wherein means are provided for determining deviations from a stored comparison image and/or from a standard image created by evaluating a plurality of comparison images, and/or means are provided for similarity analysis by a stored comparison image and/or a standard image created by evaluating a plurality of comparison images (Paragraphs 19, 166-167, 231-232, 234, and 252-267).

The examiner notes that **Sinclair** teaches **"wherein means are provided for determining deviations from a stored comparison image and/or from a standard image created by evaluating a plurality of comparison images, and/or means are provided for similarity analysis by a stored comparison image and/or a standard image created by evaluating a plurality of comparison images"** as "Another significant element of this invention is one or more retinal grading algorithms that automatically evaluate the digital retinal images obtained by the screening subsystems for particular retinopathies. Generally, the RGAs operate in a lesion-based fashion, first identifying ophthalmologically significant retinal lesions or features by use of image processing methods, and second evaluating and grading the retinopathy in view of the identified lesions by use of artificial intelligence/cognitive decision capabilities" (Paragraph 19), "The RGAs are based on detecting and identifying "lesions" in fundus images. Therefore, each image (field of view) is evaluated to detect the number and type of lesions, and the cumulative lesion information for all acquired images is processed to arrive at a final retinopathy grade level for each eye. This processing may be by an expert system, perhaps rule-based, that simulates the considerations of an ophthalmologist when presented with similar cumulative lesion information" (Paragraph 231), and "In somewhat more detail, the following lists DR lesions that are preferably detected and identified by all RGA algorithms. Sophisticated RGA algorithms for DR detect additionally the advantageous lesions. DR Lesions and Characteristics Preferably Identified...Fovea (or approximate foveal location)... Epi-retinal (or epi-papillary)

neovascularization--size and distance to optic nerve head or fovea" (Paragraphs 252-265).

Response to Arguments

11. Applicant's arguments with respect to claims 7-13 filed on 04/13/2007 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,757,409 issued to **Marshall et al.** on 29 June 2004. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. PGPUB 2004/0156016 issued to **Kerr et al.** on 12 August 2004. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 7,055,955 issued to **Kishida et al.** on 06 June 2006. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,755,526 issued to **Shibata** on 29 June 2004. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,112,114 issued to **Dreher** on 29 August 2000. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,409,342 issued to **Ohnyuma et al.** on 25 June 2002. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,928,193 issued to **Gersten** on 09 August 2005. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 5,287,129 issued to **Sano et al.** on 15 February 1994. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,053,865 issued to **Sugiyama et al.** on 25 April 2000. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 5,993,001 issued to **Bursell et al.** on 13 November 1999. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 5,557,9471 issued to **Barber et al.** on 26 November 1996. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,766,041 issued to **Golden et al.** on 20 July 2004. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,453,057 issued to **Marshall et al.** on 17 September 2002. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,714,672 issued to **Berestov et al.** on 30 March 2004. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,,179,421 issued to **Pang** on 30 January 2001. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 6,840,933 issued to **Pang et al.** on 11 January 2005. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

U.S. Patent 7,025,459 issued to **Cronsweet et al.** on 11 April 2006. The subject matter disclosed therein is pertinent to that of claims 7-13 (e.g., methods to capture, store, analyze, compare, and retrieve fundus images).

Contact Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mahesh Dwivedi whose telephone number is (571) 272-2731. The examiner can normally be reached on Monday to Friday 8:20 am – 4:40 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached (571) 272-3642. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mahesh Dwivedi
Patent Examiner
Art Unit 2168

MHD
May 14, 2007

TIM VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100